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PILOT STUDY OF FIVE PROPOSED PHYSICAL FITNESS
TESTS FOR USE IN NORTH CAROLINA

A Report

by

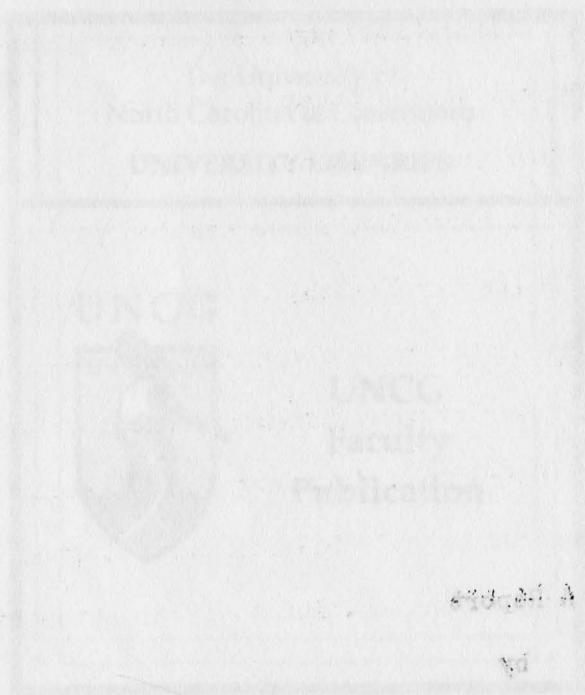
Rosemary McGee

Research Grant No. 43 of the
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of the University of North Carolina, Greensboro, N. C.

June, 1959

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by
Kenneth McGee

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PILOT STUDY OF FIVE PROPOSED PHYSICAL FITNESS TESTS FOR USE IN NORTH CAROLINA

The Fitness Committee of the North Carolina Association for Health, Physical Education, and Recreation tentatively approved five motor tests as a proposed fitness battery to be used in the schools of North Carolina. Before general distribution and final adoption, the test items needed to be studied and tried out. This report contains the results of the preliminary study of the Proposed Fitness Battery. This trial study was undertaken to detect weaknesses in the test descriptions and test administrative procedures and to obtain an indication of the possible norms that might be available after wider use of the tests over the state. It is hoped that the committee will study this report and consider revisions of the test battery and recommended procedures. Then the committee may want to recommend this fitness battery to the state association as the one to carry its approval for use over the state.

Participants

The Superintendents of Public Schools in Charlotte, Salisbury, and Wilmington were contacted about participating in this study. The testing project was explained, the personnel to be involved in their schools was designated, and permission was sought to carry out the testing project. Then the Supervisors of Instruction, Principals, Physical Education Supervisors, and Teachers were contacted for the purpose of soliciting their cooperation. The writer made a trip to each city to meet with the school personnel responsible for administering the tests. A copy of the conference outline may be found in the Appendix. The discussions covered the test

items and their careful descriptions and administration, the equipment and supplies needed for the project, and the organizational plan suggested for administering the battery. Score cards were supplied and a copy may be found in the Appendix. In addition, each person was asked to fill out an evaluation form at the completion of the testing project and this form was discussed. These conferences assured understanding and clarity about the testing project and were at least partially responsible for the good response. The writer served as the contact person, but the actual testing was organized by the classroom teachers, physical education teachers, and physical education supervisors.

A sampling of ninth, seventh, and fourth grade boys and girls was obtained. This particular plan was used in an effort to get some indication of progressive motor performance at those three grade levels. These grades would also provide some knowledge about the performance on these test items by elementary, junior high, and senior high school students. Table I shows the number of students who were tested and whose score cards were used in the analysis of the data.

TABLE I

Number of Students Tested
on the Proposed Fitness Battery

	Boys	Girls	Total
9th Graders	207	146	353
7th Graders	88	203	291
4th Graders	102	129	231
Totals	397	478	875

The ninth grade boys were members of the Salisbury and Charlotte schools. The ninth grade girls were tested in Charlotte and Wilmington. The seventh grade boys were from Charlotte and the seventh grade girls were from Charlotte and Wilmington. The fourth grade boys and girls were from the elementary schools in Charlotte and Salisbury.

Summary of the Evaluation Forms

The evaluation forms provided the opinions and reactions of the physical educators who had the first hand experience with the test battery. The comments of these eleven physical education teachers are of value and give some points to be considered by the Fitness Committee.

The first section of the form was concerned with the actual test items, their appropriateness, their simplicity, etc. Ten of the teachers thought the Sit-Up item was a good one and that the 30-second time limit was satisfactory. The Side Stepping item was considered a good test by nine of the teachers. Two thought it was a meaningless test and one commented on the difficulty of sliding on the floor while taking the test. The Broad Jump received the approval of seven of the teachers. Others considered it the slowest of the five items and suggested two stations for this item so it would not be a "bottle-neck" as students rotated from test to test. The Modified Pull-Ups were difficult to perform accurately and there was some question about the scoring of this item. The teachers recommended retaining the 30-second time period for the fourth grade boys but using a 15-second time period for the fourth grade girls. Five of the teachers thought the 30-second period was too long for the regular

Pull-Ups for boys. There was comment about the advisability of asking young boys to do a regular pull-up because of the strain on the sternum which, at this age, is still cartilage to a great extent. Some questioned the position of the palms turned away from the face to grasp the bar. The 30-second time period for the Squat Thrusts proved satisfactory for nine of the respondents. Some reported strict adherence to the four movements of the test item and others were not concerned about it. Perhaps some standardization needs to be designated in the description of this item. Two teachers considered 30-seconds too long to perform Squat Thrusts.

Nine of the eleven teachers reported the written descriptions of the test items were clear. Suggestions were made for revising the Modified Pull-Ups and Pull-Ups. The revised copy appears in the Appendix. There was some concern about the clothing worn by the elementary school children and that perhaps they were handicapped by their regular school clothes. Isolated suggestions were made to include a running item, a Running Broad Jump, and a Jump and Reach test. In general the teachers found the five test items to be practical and feasible to administer and they seemed pleased that they were all indoor test items. They also commented upon the interest and enjoyment reflected by the students as they took the tests, and surely this, too, is an important consideration.

The second part of the evaluation form referred to the class organization which was recommended. Briefly it called for the use of student leaders to "man" the five testing stations and for the class to rotate to each station in groups until all five tests had been taken. All eleven of the teachers found the plan workable for training one

student leader for each station. Some of the teachers trained the squad leaders, one used honor students, and several commented that they trained only one team of students which helped with every class. All eleven teachers said they had faith in the accuracy of the scoring by the students. This is an important aspect of this particular organizational plan. The Broad Jump and Pull-Up stations seemed to move a little slower than the others and there was some suggestion for two stations of each of these items. One teacher suggested the use of two student leaders at each station to speed up the process. The suggested administrative plan was not acceptable with classes of low IQ students and this was the only reservation given about the plan.

One full hour class period seemed to be adequate time for a class of approximately thirty-five students to take the full battery. This presupposes preliminary training of the student leaders and some explanation about the project to the students. The elementary school teachers did encounter difficulty since they have only a 30-minute class for physical education. The majority of them were able to obtain special permission from their principals to complete the testing within one time block even though they took time allotted to other subjects.

Ten of the eleven teachers thought a classroom teacher could administer the battery using the suggested organizational plan. The elementary school classroom teachers were most emphatic about this. These teachers did receive help from physical education supervisors and principals in some cases, but their definiteness about this question gives encouragement that perhaps classroom teachers will use the test battery of their own volition.

The equipment necessary for the tests did not create any serious problems. Some stop watches had to be borrowed and chinning bars were not always available but these difficulties were overcome. Tumbling mats were not used in many cases.

All of the teachers used a central timing plan. In two cases a clock on the wall was the time instrument so each station was manned with a student to start and stop the child as well as with a student to score the test.

The organizational plan was considered to be simple, easy, and excellent by the majority of the teachers using it. Many thought the rotation of students from station to station worked well. Good orientation of the principals and of the teachers also helped to make the plan so workable. This is to the credit of the physical education supervisors and teachers.

Ten of the teachers would be in favor of seeing this battery used on a state-wide basis. They commented on the need to standardize the practice and motivational factors involved. They liked an all indoor battery, wanted to compare scores at the beginning and end of the school year, and were enthusiastic about the use of the battery to encourage the improvement of physical education programs in the state.

Analysis of the Score Cards

The 875 score cards provided the basis for the tentative norms, means, and other statistical methods of studying the test items. Basically, the test items were treated by grades for each sex. Both percentile and T-score norms were computed. Percentile norms are widely used in the public schools and are familiar to the teachers who

must interpret them. The T-score norms are more adaptable to further research on the battery. It is with these scores that an attempt can be made to arrive at a composite battery score which might provide an index of physical fitness. In addition to grades, the students were grouped by age and by a Classification Index to obtain norms. The Classification Index is a weighted index which considers the age, height, and weight of a child and thus groups him according to his size. Many of these additional categories hold too few cases to report the norms. However, they were computed and are available to the committee to study and to add to as more cases become available. Table II shows the means and standard deviations for each test item for each grouping of the boys. Table III shows the same information for the girls. These tables list all of the categories used for computing the norms, but only the norms for the starred categories are reported here. An examination of the means for grades nine, seven, and four reveal some development patterns. This was particularly true for the Sit-Ups and Broad Jump items for the boys. The standard deviations appear to be homogeneous for each test item.

Tables IV, V, and VI report the percentile norms by grade for each test item and for both boys and girls. This arrangement permits comparisons of performance among the five test items. A ninth grader can, for example, convert his raw scores to such a table and draw a profile of his performance on the five-item battery. Teachers and students can then detect areas of performance which need more concentration. Teachers may reproduce these tables to use as individual profile sheets for their students. The same profile plan is possible with Tables VII, VIII, and IX which report the same type of information

TABLE II

Means and Standard Deviations for Each Test Item
on Each Grouping of Boys

Categories	N	Sit-Ups		Side Stepping		Broad Jump		Pull-Ups		Squat Thrusts	
		M	SD	M	SD	M	SD	M	SD	M	SD
9th Grado*	207	20.09	4.75	12.02	2.74	77.52	9.79	4.04	3.24	12.70	3.35
7th Grado*	88	18.34	5.01	10.40	2.22	63.95	8.28	2.06	2.11	11.38	2.84
4th Grado*	102	13.31	5.56	10.57	2.32	54.09	7.81	13.35*	5.74*	13.38	3.30
Ago 15	69	20.13	3.76	11.96	2.77	79.54	9.64	4.48	3.08	13.14	3.30
Ago 14	115	20.03	5.00	11.90	2.81	74.83	9.77	3.31	3.08	12.30	3.19
Ago 12	61	18.08	4.88	10.54	2.13	63.08	8.16	1.82	1.78	11.74	2.85
Ago 9	75	13.31	5.32	10.48	1.90	53.90	8.01	13.01*	5.98*	13.31	3.41
Classification Index "H"	104	19.88	4.44	12.01	2.83	81.03	9.55	4.26	3.11	12.92	3.32
C. I. "G"	45	19.53	4.46	11.33	3.07	73.56	9.55	4.16	4.00	12.38	3.52
C. I. "F"	42	21.12	5.65	12.36	2.24	73.33	8.94	3.64	3.11	11.93	2.50
C. I. "E"	46	18.37	4.75	11.30	2.40	69.22	8.41	2.39	2.28	12.39	3.00

*Norms included for these categories.

*Modified
Pull-Ups

TABLE III

Means and Standard Deviations for Each Test Item
on Each Grouping of Girls

Categories	N	Sit-Ups		Side Stepping		Broad Jump		Modified Pull-Ups		Squat Thrusts	
		M	SD	M	SD	M	SD	M	SD	M	SD
9th Grado*	146	10.47	5.19	9.95	1.89	65.34	9.44	12.38	10.67	9.57	2.9
7th Grado*	203	10.69	3.75	8.03	1.98	66.19	9.41	9.68	6.26	10.05	2.7
4th Grado*	129	9.60	5.53	9.60	2.04	47.41	6.93	9.26	4.96	12.33	3.9
Ago 15	36	8.33	4.36	9.25	1.64	65.25	8.33	15.61	11.18	9.08	2.6
Ago 14	103	11.13	5.07	10.12	1.93	64.75	10.18	10.52	9.44	9.64	3.0
Ago 13	44	10.73	4.01	7.80	1.90	68.48	8.24	12.32	6.58	9.70	2.7
Ago 12	145	10.77	3.76	8.11	1.98	66.45	9.16	9.30	6.11	10.12	2.7
Ago 9	98	9.65	5.69	9.62	1.98	46.86	6.27	9.88	4.81	12.35	4.1
Classification Index "G"	47	9.83	4.50	9.89	2.59	63.19	9.34	9.96	10.95	9.26	2.7
C. I. "F"	93	10.55	4.58	8.91	2.03	66.30	9.45	11.26	8.72	9.62	2.8
C. I. "E"	96	10.70	4.23	8.32	2.12	66.91	9.38	11.34	8.05	9.73	2.6
C. I. "D"	53	11.19	3.94	8.23	1.98	66.51	10.16	10.21	6.08	10.87	2.9

*Norms included for these categories.

but in T-scores instead of percentiles. T-scores, unlike percentiles, can be added and averaged. In this way the teachers can arrive at an average T-score for the entire battery if they are willing to assume that each of the five items in the battery is equally important to the concept of physical fitness. It is in this regard that the committee may want to do further statistical work to arrive at a weighted battery score which might be more indicative of a true fitness index.

Tables X, XI, XII, XIII, XIV, and XV give the percentile norms for each item for the 9th, 7th, and 4th grades. This arrangement permits comparisons of performance among the three grades.

Recommendations

Recommendations to the Fitness Committee of the North Carolina Association for Health, Physical Education, and Recreation:

1. Consider the revised descriptions for the Pull-Ups and Modified Pull-Ups.
2. Consider the position of the body when performing the Modified Pull-Ups.
3. Consider scoring the accurate performance of the Squat Thrusts by using four definite movements.
4. Consider the advisability of using a Pull-Up item for young boys.
5. Study the percentile and T-score scales to see if the desired range of performance is evident.
6. Analyze the five items statistically to arrive at the weightings necessary for a composite battery score.
7. Decide if the battery is worth recommending to the state association for adoption; and, if it is not, to decide what further study needs to be undertaken.

TABLE IV

Percentile Norms for 9th Grade Boys and 9th
Grade Girls on Five Test Items

%ile	Boys N - 207					%ile	Girls N - 146					%ile
	SU	SS	BJ	PU	ST		SU	SS	BJ	PU	ST	
95	28	16	93	11	18	95	19	13	81	34	14	95
90	26	15	90	9	17	90	17	12	79	29	13	90
85	25	15	89	8	16	85	16	11	76	26	13	85
80	25	14	86	7	16	80	15	11	74	24	12	80
75	24	14	85	7	15	75	15	11	72	21	12	75
70	23	14	84	6	15	70	14	11	71	18	12	70
65	22	13	82	5	15	65	13	11	70	15	11	65
60	22	13	80	5	14	60	13	10	68	12	11	60
55	21	13	79	4	14	55	12	10	67	10	11	55
50	21	12	78	4	13	50	11	10	66	9	10	50
45	20	12	77	3	13	45	10	10	64	8	10	45
40	20	12	76	3	12	40	10	10	63	7	10	40
35	19	11	75	3	12	35	9	10	62	6	9	35
30	18	11	73	2	12	30	9	9	61	5	9	30
25	18	11	72	2	11	25	7	9	60	4	8	25
20	17	10	70	1	10	20	6	9	58	3	8	20
15	16	10	67	1	10	15	5	8	56	2	7	15
10	15	8	65	0	9	10	3	8	53	1	6	10
5	14		62		7	5	1	8	51		3	5

TABLE V

Percentile Norms for 7th Grade Boys and 7th
Grade Girls on Five Test Items

%ile	Boys N - 88					%ile	Girls N - 203					%ile
	SU	SS	BJ	PU	ST		SU	SS	BJ	PU	ST	
95	25	15	78	7	15	95	17	12	81	21	14	95
90	24	15	75	7	15	90	16	11	79	19	14	90
85	23	13	74	5	15	85	15	10	76	17	13	85
80	23	13	72	5	15	80	14	10	75	16	13	80
75	22	13	71	4	14	75	13	9	74	15	12	75
70	22	13	70	3	14	70	12	9	72	14	12	70
65	21	12	68	3	14	65	12	9	71	13	12	65
60	21	12	67	3	13	60	11	9	70	12	11	60
55	20	12	66	2	13	55	11	8	69	11	11	55
50	20	11	64	2	13	50	11	8	68	10	11	50
45	19	11	64	2	13	45	10	8	65	9	10	45
40	19	11	63	2	12	40	10	8	64	8	10	40
35	18	11	62	2	12	35	10	8	61	7	9	35
30	17	10	61	2	12	30	9	7	60	6	9	30
25	16	10	60	2	11	25	9	7	60	6	9	25
20	15	10	57	1	9	20	9	6	59	5	8	20
15	14	9	55		9	15	8	6	57	3	8	15
10	13	8	53		8	10	7	6	55	1	7	10
5	9	7	50		8	5	4	5	50		6	5

TABLE VI

Percentile Norms for 4th Grade Boys and 4th
Grade Girls on Five Test Items

%ile	Boys N - 102					%ile	Girls N - 129					%ile
	SU	SS	BJ	PU	ST		SU	SS	BJ	PU	ST	
95	23	14	67	23	18	95	19	12	58	19	18	95
90	21	13	65	22	18	90	17	11	56	16	17	90
85	19	12	64	20	17	85	15	11	54	14	17	85
80	18	12	62	19	17	80	15	11	53	13	16	80
75	18	12	60	19	16	75	14	11	52	12	15	75
70	17	11	58	18	16	70	13	10	51	12	15	70
65	16	11	57	16	15	65	12	10	50	11	14	65
60	15	11	56	15	15	60	11	10	49	11	14	60
55	15	11	56	14	15	55	10	10	49	10	13	55
50	14	10	55	13	14	50	10	10	48	9	13	50
45	13	10	54	12	13	45	9	10	47	9	12	45
40	12	10	53	12	13	40	8	9	45	8	12	40
35	11	10	52	11	13	35	8	9	45	8	10	35
30	10	10	51	10	12	30	7	9	44	7	10	30
25	10	9	49	10	11	25	6	9	43	7	10	25
20	9	9	47	9	10	20	5	8	43	6	9	20
15	7	9	46	8	10	15	4	8	42	4	8	15
10	6	9	45	7	9	10	3	8	40	3	7	10
5	5	8	42	5	8	5	0	7	38	0	7	5

TABLE VII

T-score Norms for 9th Grade Boys and 9th
Grade Girls on Five Test Items

T-Score	Boys N - 207					T-Score	Girls N - 146					T-Score
	SU	SS	BJ	PU	ST		SU	SS	BJ	PU	ST	
80		20		14		80	27	16		44		80
75	32	19	102	12	21	75	24	15	89	39		75
70	30	17	98	10	19	70	21	14	84	34	16	70
65	28	16	92	9	18	65	18	13	79	28	14	65
60	25	15	87	7	16	60	16	12	75	23	13	60
55	23	13	82	6	14	55	13	11	70	18	11	55
50	20	12	78	4	13	50	10	10	65	12	10	50
45	18	11	73	2	11	45	8	9	61	7	8	45
40	15	9	69	1	9	40	6	8	56	2	7	40
35	13	8	63	0	8	35	3	7	51		5	35
30	10	7	58		6	30	0	6	47		4	30
25	8	5	53		4	25		5	42		2	25
20	6	3			2	20		4			1	20

TABLE VIII

T-Score Norms for 7th Grade Boys and 7th
Grade Girls on Five Test Items

T-Score	Boys N - 88					T-Score	Girls N - 203					T-Score
	SU	SS	BJ	PU	ST		SU	SS	BJ	PU	ST	
80				8		80	22	14				80
75		16	85	7		75	20	13	90	25		75
70	29	15	81	6		70	18	12	85	22	16	70
65	26	14	76	5	16	65	16	11	80	19	14	65
60	24	13	72	4	14	60	14	10	76	16	13	60
55	21	12	68	3	13	55	13	9	71	13	11	55
50	18	10	64	2	11	50	11	8	66	10	10	50
45	16	9	60	1	10	45	9	7	61	6	9	45
40	14	8	56	0	9	40	7	6	57	3	7	40
35	11	7	51		7	35	5	5	52	0	6	35
30	8	6	48		6	30	3	4	47		5	30
25	6	5	43		4	25	1	3	43		3	25
20	4	4				20	0	2			2	20

TABLE IX

T-Score Norms for 4th Grade Boys and 4th
Grade Girls on Five Test Items

Boys N - 102						Girls N - 129						
T-Score	SU	SS	BJ	PU	ST	T-Score	SU	SS	BJ	PU	ST	T-Score
80		16				80	26	16	67		24	80
75	28	15				75	24	15	64	22	22	75
70	25	14	70	25	20	70	21	14	60	19	20	70
65	22	13	66	22	18	65	18	13	57	17	18	65
60	19	12	62	19	17	60	15	12	54	14	16	60
55	16	12	58	16	15	55	13	11	51	12	14	55
50	13	11	54	13	13	50	10	10	47	9	12	50
45	10	10	50	10	12	45	7	9	44	7	10	45
40	7	9	46	7	10	40	4	8	41	4	8	40
35	5	8	42	5	8	35	1	7	38	2	6	35
30	2	7	38	2	7	30		6	34	0	5	30
25	0	6	34		5	25		5	31			25
20		5	30			20		4				20

TABLE X

Percentile Norms for Sit-Ups
on 9th, 7th, and 4th Grade Boys and Girls

%ile	Boys			%ile	Girls			%ile
	9th Grado N-207	7th Grado N-88	4th Grado N-102		9th Grado N-146	7th Grado N-203	4th Grado N-129	
95	28	25	23	95	19	17	19	95
90	26	24	21	90	17	16	17	90
85	25	23	19	85	16	15	15	85
80	25	23	18	80	15	14	15	80
75	24	22	18	75	15	13	14	75
70	23	22	17	70	14	12	13	70
65	22	21	16	65	13	12	12	65
60	22	21	15	60	13	11	11	60
55	21	20	15	55	12	11	10	55
50	21	20	14	50	11	11	10	50
45	20	19	13	45	10	10	9	45
40	20	19	12	40	10	10	8	40
35	19	18	11	35	9	10	8	35
30	18	17	10	30	9	9	7	30
25	18	16	10	25	7	9	6	25
20	17	15	9	20	6	9	5	20
15	16	14	7	15	5	8	4	15
10	15	13	6	10	3	7	3	10
5	14	9	5	5	1	4	0	5

TABLE XI

Percentile Norms for Side Stepping
on 9th, 7th, and 4th Grade Boys and Girls

%ile	Boys			%ile	Girls			%ile
	9th Grade N-207	7th Grade N-88	4th Grade N-102		9th Grade N-146	7th Grade N-203	4th Grade N-129	
95	16	15	14	95	13	12	12	95
90	15	15	13	90	12	11	11	90
85	15	13	12	85	11	10	11	85
80	14	13	12	80	11	10	11	80
75	14	13	12	75	11	9	11	75
70	14	13	11	70	11	9	10	70
65	13	12	11	65	11	9	10	65
60	13	12	11	60	10	9	10	60
55	13	12	11	55	10	8	10	55
50	12	11	10	50	10	8	10	50
45	12	11	10	45	10	8	10	45
40	12	11	10	40	10	8	9	40
35	11	11	10	35	10	8	9	35
30	11	10	10	30	9	7	9	30
25	11	10	9	25	9	7	9	25
20	10	10	9	20	9	6	8	20
15	10	9	9	15	8	6	8	15
10	8	8	9	10	8	6	8	10
5		7	8	5	8	5	7	5

TABLE XII

Percentile Norms for Broad Jump
on 9th, 7th, and 4th Grade Boys and Girls

%ile	Boys			%ile	Girls			%ile
	9th Grade N-207	7th Grade N-88	4th Grade N-102		9th Grade N-146	7th Grade N-203	4th Grade N-129	
95	93	78	67	95	81	81	58	95
90	90	75	65	90	79	79	56	90
85	89	74	64	85	76	76	54	85
80	86	72	62	80	74	75	53	80
75	85	71	60	75	72	74	52	75
70	84	70	58	70	71	72	51	70
65	82	68	57	65	70	71	50	65
60	80	67	56	60	68	70	49	60
55	79	66	56	55	67	69	49	55
50	78	64	55	50	66	68	48	50
45	77	64	54	45	64	65	47	45
40	76	63	53	40	63	64	45	40
35	75	62	52	35	62	61	45	35
30	73	61	51	30	61	60	44	30
25	72	60	49	25	60	60	43	25
20	70	57	47	20	58	59	43	20
15	67	55	46	15	56	57	42	15
10	65	53	45	10	53	55	40	10
5	62	50	42	5	51	50	38	5

TABLE XIII

Percentile Norms for Pull-Ups
on 9th, 7th, and 4th Grade Boys and Girls

%ile	Boys			%ile	Girls*			%ile
	9th Grade N-207	7th Grade N-88	4th* Grade N-102		9th Grade N-146	7th Grade N-203	4th Grade N-129	
95	11	7	23	95	34	21	19	95
90	9	7	22	90	29	19	16	90
85	8	5	20	85	26	17	14	85
80	7	5	19	80	24	16	13	80
75	7	4	19	75	21	15	12	75
70	6	3	18	70	18	14	12	70
65	5	3	16	65	15	13	11	65
60	5	3	15	60	12	12	11	60
55	4	2	14	55	10	11	10	55
50	4	2	13	50	9	10	9	50
45	3	2	12	45	8	9	9	45
40	3	2	12	40	7	8	8	40
35	3	2	11	35	6	7	8	35
30	2	2	10	30	5	6	7	30
25	2	2	10	25	4	6	7	25
20	1	1	9	20	3	5	6	20
15	1		8	15	2	3	4	15
10	0		7	10	1	1	3	10
5			5	5			0	5

*All of the girls and the 4th grade boys performed Modified Pull-Ups.

TABLE XIV

Percentile Norms for Squat Thrusts
on 9th, 7th, and 4th Grade Boys and Girls

%ile	Boys			%ile	Girls			%ile
	9th Grade N-207	7th Grade N-88	4th Grade N-102		9th Grade N-146	7th Grade N-203	4th Grade N-129	
95	18	15	18	95	14	14	18	95
90	17	15	18	90	13	14	17	90
85	16	15	17	85	13	13	17	85
80	16	15	17	80	12	13	16	80
75	15	14	16	75	12	12	15	75
70	15	14	16	70	12	12	15	70
65	15	14	15	65	11	12	14	65
60	14	13	15	60	11	11	14	60
55	14	13	15	55	11	11	13	55
50	13	13	14	50	10	11	13	50
45	13	13	13	45	10	10	12	45
40	12	12	13	40	10	10	12	40
35	12	12	13	35	9	9	10	35
30	12	12	12	30	9	9	10	30
25	11	11	11	25	8	9	10	25
20	10	9	10	20	8	8	9	20
15	10	9	10	15	7	8	8	15
10	9	8	9	10	6	7	7	10
5	7	8	8	5	5	6	7	5

TEST DESCRIPTIONS

SIT-UPS for boys and girls in the 4th through the 12 gradesEquipment:

Mats should be used if available; otherwise, the floor is satisfactory. Time either with a regular watch which has a second hand or, preferably, with a stop watch.

Description:

The student lies on his back with his fingers clasped behind his neck and elbows touching the floor, his knees bent, and his feet flat on the floor pulled in close to his body. A partner holds down the feet. The student sits up turning the trunk to the left touching the right elbow to the left knee, returns to the starting position, then sits up touching the left elbow to the right knee. The exercise is repeated, alternating sides.

Scoring:

One point is scored for each contact of elbow to knee. The score is the number of correct sit-ups performed in 30-seconds.

Comments:

1. The student must return to the starting position with the elbows contacting the floor to minimize bouncing back up.
2. Fingers must remain in contact behind the neck throughout the exercise.
3. No rest is permitted between sit-ups.

SIDE STEPPING for boys and girls in the 4th through the 12 gradesEquipment:

Two lines eight feet apart. Time with a watch which has a second hand or with a stop watch.

Description:

Student stands astride one line. On the signal to start he moves sideward with a side step leading with the foot nearest the line he is approaching and repeats this step until his foot has touched or gone beyond the line. He then moves to the other side line in the same manner.

Scoring:

Each return trip to the starting line counts one point. The score is the number of trips completed in 30-seconds.

Comments:

1. Student must face in the same direction throughout the exercise.
2. Student must reach the line.

STANDING BROAD JUMP for boys and girls in the 4th through the 12 gradesEquipment:

Take-off mark and tape measure. Yard stick and chalk. Mats are desirable but not essential.

Description:

The student stands with his feet several inches apart and with his toes just back of the take-off mark. He may swing his arms

and bend his knees in making the forward jump. Student must take-off and land on both feet.

Scoring:

The measurement is made from the take-off line to the nearest point where any part of the body touches the floor. Three trials are given and the best one is recorded in inches.

Comments:

1. A leap is a foul and not scored but is considered one of the three trials.
2. The same rule applies if the toes of the student extend beyond the take-off mark as the jump is executed.
3. The scorer should be alert for the first contact to the floor in case the jumper's follow-through carries him several steps.

PULL-UPS for boys in the 7th through the 12th grades

Equipment:

A bar approximately one inch in diameter which can be fixed to prevent rotation should be used. Preferably the bar should be adjustable to various heights. Time with a watch which has a second hand or with a stop watch.

Description:

The student starts by grasping the bar with the palms of the hands turned away from the face and extending the body in a hanging position with the feet off the floor. Using his arms he raises his body until his chin is over the bar and then lowers to the starting position.

Scoring:

A correct pull-up requires raising the chin over the bar and returning to the starting position. Score is the number of correct pull-ups performed in 30-seconds.

Comments:

1. The body must not swing to aid chinning.
2. The knees may not be raised or the feet kicked to aid the action.
3. The pull must be a continuous movement without a snap.
4. No resting is permitted during the 30-seconds.
5. After each pull-up the body must be lowered until the arms are fully extended.

MODIFIED PULL-UPS for all girls, and for boys in the 4th through the 6th grades

Equipment:

Two chairs of equal height approximately 30 inches high support a bar one inch in diameter and four feet long. A person sits in each chair and holds the bar on top of the chair to prevent it from sliding and rotating. Time with a watch which has a second hand or with a stop watch.

Description:

Student takes sitting position on floor under bar, feet extended, grasps bar with the palms of the hands turned away from the face, and the arms fully extended. He lifts his body, knees straight, until chest or chin touches the bar, and lowers body to a full extension of the arms.

Scoring:

The score is the number of correct pull-ups performed in 30-seconds.

Comments:

1. No resting is permitted during the 30-seconds.
2. The body should be kept in a straight position.
3. The student is not allowed a pumping motion or a bounce from the floor.

SQUAT THRUSTS for boys and girls in the 4th through the 12th gradesEquipment:

Time with a watch which has a second hand or with a stop watch.

Description:

The student starts in a standing position. (1) He goes to a full squat position placing the hands on the floor about shoulder width apart in front of the feet; (2) He thrusts both legs backward to a front leaning position with the body resting on hands and toes and approximately straight from his shoulders to his feet; (3) He returns to the full squat position; (4) Then he stands erect.

Scoring:

The score is the number of complete repetitions correctly accomplished in 30-seconds.

Comments:

1. No rest is permitted during the time period of the test.
2. The back must be straight in the front leaning position.
3. The full squat position must be obtained before thrusting the legs backward.

SCORE CARD

No. _____

Date: _____

Town: _____

School: _____

Teacher: _____

Student: _____

Grade: _____ Sex: _____

Age: _____ Exp.: _____

Height: _____ Exp.: _____

Weight: _____ Exp.: _____

PROPOSED FITNESS TEST

Sit-Ups: _____

Side Stepping: _____

Broad Jump: _____

Pull-Ups: _____

Squat Thrusts: _____

Total: _____

CLASSIFICATION INDEX

Sum of Exps.: _____ Class. _____

OUTLINE OF TOPICS TO DISCUSS WITH EACH TEACHER PARTICIPATING IN THE STUDY

I. Tests

- A. Background information - selection of tests
- B. Written descriptions
- C. Demonstrated and discussed
- D. Data carefully collected

II. Equipment and Supplies

A. Score Card

- 1. Fill out as much as possible ahead of time
- 2. Age, height, and weight as of September 1st - from cumulative records
- 3. Leave parts blank
- 4. Supplied

B. Equipment

- 1. Stop watch or time clock
- 2. Chalk or masking tape
- 3. Tape measure or yard stick
- 4. Rod, 2 chairs
- 5. Chinning bar - or doorway to install bar
- 6. Score cards and pencils

III. Organization

- A. Squads
- B. Train leaders to man each station
- C. Demonstrate all five tests before rotation begins
- D. Maintain certain sequence of taking tests
- E. Use one central watch - or train two for each station - (one to score and one to time)
- F. If at all possible, administer all five items in one period
- G. Other details - Shoes, Medicals, Absentees, etc.

IV. Evaluation

- A. Form to fill out

EVALUATION OF PROPOSED FITNESS TESTS

Name _____ School _____ Grade _____

No. of students in class _____ No. of minutes per period required to administer the tests _____

TEST ITEMS: Were they good ones? Were there questions about the scoring, performance, etc. of any of the items. Were they practical and feasible to administer. Was the 30-second time limit suitable? Comment.

1. Sit-Ups: Was the 30-second period too long or too short?

2. Side Stepping:

3. Broad Jump:

4. Pull-Ups: Approximately how many were done after 15 seconds? (Spot check)
Was the 30-second period too long or too short?

5. Squat Thrusts: Did the students perform the test in 4 counts?
Was the 30-second period too long or too short?

6. Were the written descriptions clear?
(Use the attached copy to make suggestions.) _____

7. Do you have faith in the accuracy of the scoring by the students? _____

8. General comments about test items:

CLASS ORGANIZATION:

1. Was the plan of training one student leader for each station workable? _____

2. What suggestions would you make? _____

2

3. Did you find it feasible to administer the battery in only one class period? _____
4. Do you think a classroom teacher could administer the battery using the class organization which you used? _____
5. Was any piece of equipment impractical or too difficult to obtain? _____
6. Did you use one central stop watch? _____
or
Did you use a stop watch for each station? _____
7. General comments about organization: _____

GENERAL:

If the items prove to be good ones, would you be in favor of using this battery of five items on a state-wide basis for developing norms? _____

Comments:

OTHER COMMENTS, IMPRESSIONS, OBSERVATIONS, ETC. YOU WOULD LIKE TO NOTE:

Thank you very much.

Rosemary McGee
Woman's College
Greensboro, North Carolina

